ABCD Arq Bras Cir Dig
2009;22(4):235-6

Case Report

EMPHYSEMATOUS CHOLECYSTITIS

Colecistite enfisematosa

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ABCDDV/680

Lupinacci RM, Chafai N, Tiret E. Emphysematous cholecystitis. ABCD Arq Bras Cir Dig 2009;22(4):235-6

ABSTRACT – ***Background*** - Emphysematous cholecystitis is life-threatening condition characterized by gas-forming infection of the gallbladder. It is mostly seems in old male patients with systemic, specially diabetes and vascular diseases. ***Case report*** - A 30-year-old man without previous diseases was admitted because of right upper quadrant pain and nausea. On admission the patient was febrile (38.7o) with normal bilirubin levels. The white blood count was 26700/µl and reactive protein C was 470. Axial sections of single slice computed tomography imaging (section thickness 5 mm), revealed gallbladder wall enhancement after i.v. contrast, as well as dilatation of the gallbladder with intraluminal air. The patient underwent open cholecystectomy. The culture of the bile showed *clostridium perfringes*. The postoperative course of the patient was uneventful. ***Conclusion*** - This is a rare form of cholecystitis that carries a high mortality and usually present insidious clinical signs. CT is the most accurate imaging technique. Antibiotic therapy should begin quickly and include coverage of common pathogens, particularly Clostridia. Surgical intervention should take place as early as possible.

HEADINGS - Cholecystitis, acute. Emphysema. Abdomen, acute. Gallbladder diseases. Acalculous cholecystitis.

INTRODUCTION

Emphysematous (gas-forming) infections of the abdomen represent potentially life-threatening conditions that require aggressive medical and often surgical management. Emphysematous cholecystitis (EC) is an uncommon variant of acute cholecystitis in which the causative organisms are gas-forming bacteria. EC has been defined clinically by the imaging demonstration of air in the gallbladder lumen, in the wall, or in the tissues adjacent to the wall of the gallbladder; and elsewhere in the biliary ducts in the absence of an abnormal communication with the gastrointestinal tract[7].EC is pathophysiologically different from acute or chronic cholecystitis. Obstruction of the gallbladder neck secondary to cholelithiasis induces acute and chronic cholecystitis. However, EC mostly results from thrombosis or occlusion of the cystic artery with ischemic necrosis of the gallbladder wall.

CASE REPORT

A 30-year-old man without previous diseases was admitted because of right upper quadrant pain and nausea. On admission the patient was febrile (38.7°) with normal bilirubin levels. The white blood count was 26700/µl and reactive protein C (RPC) was 470. Axial sections of single slice computed tomography (CT) imaging (section thickness 5 mm), revealed gallbladder wall enhancement after i.v. contrast, as well as, dilatation of the gallbladder with intraluminal air (Figure 1). The patient underwent open cholecystectomy. During surgery gas-dissection of the gallbladder wall was noted. After hazardous identification of the cystic duct a cholangiogram confirmed a normal biliary tree. The culture of the bile showed *Clostridium perfringes*. The postoperative course was uneventful. The patient was discharged from hospital at fifth postoperative day after intravenous course of broad-spectrum antimicrobial therapy.

FIGURE 1 - CT showing distended gallbladder

DISCUSSION

EC is a virulent form of acute cholecystitis. It usually affects elderly men (2:1), and it is associated with diabetes mellitus and arteriosclerosis. Vascular compromise of the cystic artery is thought to play a significant role in the evolution of the emphysematous form of this disease, likely explaining its male predilection[1,2,7]. In comparison with all cases of acute cholecystitis, EC is associated with an

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increased prevalence of acalculous disease and gallbladder perforation. The risk of gangrene of the gallbladder is relatively high, and mortality rates may reach 15 %[7].Commonly isolated organisms include *Clostridium welchii*, Clostridium perfringens and *Escherichia coli*. The presenting symptoms of EC are frequently very vague, clinical manifestation is often insidious and may then progress rapidly, requiring emergent surgical intervention[7].The clinical presentation may adopt different forms, from minimal pain to septic shock, and unusual signs such as subcutaneous infections, pneumoperitoneum, and obstructive jaundice[2,4,6,8,10,12]. The succeeding symptoms and signs depend on the evolution of the disease[10,12]. In the present case the patient had searched the emergency four days before presenting upper quadrant pain, and no fever. The blood count was at his upper limits 10000/µl and an abdominal CT scan was considered normal (Figure 2), illustrating very well this insidious progression.

The most important differential diagnosis are hepatic abscess, retroperitoneal air, enterobiliary fistula, gallstone ileus, incompetent sphincter of Oddi, and focal biliary lipomatosis[3].

Imaging studies, including abdominal x-rays, ultrasonography and CT scan of abdomen, point out air accumulation in the gallbladder wall. Gas bubbles may become detectable even 72 hours after the establishment of symptoms[5,9].CT is the most sensitive and specific imaging modality for identifying gas within the gallbladder lumen or wall[3]. Intravenously and orally administered contrast agents are usually not required.

Treatment includes prompt surgery, with cholecystectomy been the definitive one, although percutaneous cholecystostomy may be used as an initial temporizing procedure in critically ill patients[11]. In addition to surgery, broad-spectrum antimicrobial therapy, and correction of associated underlying conditions such as acid-base and electrolyte imbalances, hypovolemia, and hyperglycemia must be considered.

CONCLUSION

EC is a rare form of cholecystitis that carries a high mortality and usually present insidious clinical signs. Vascular occlusion may be very important in the development of the disease. CT is the most accurate imaging technique. Antibiotic therapy should begin quickly and include coverage of common pathogens, particularly *Clostridia*. Surgical intervention should take place as early as possible.

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RESUMO – ***Introdução*** - Colecistite enfisematosa é uma condição de risco de vida caracterizada por infecção da vesícula biliar por agentes produtores de gás. Na sua apresentação mais comum atinge preferencialmente homens idosos portadores de doenças sistêmicas em especial diabetes e vasculopatias. ***Relato do caso*** - Paciente do sexo masculino, 30 anos de idade e sem co-morbidades que se apresenta ao pronto-socorro com história de dor abdominal em hipocôndrio direito há cinco dias, febre (38,7o) e náuseas. Os exames laboratoriais mostravam leucocitose (26700/µl) e elevação dos marcadores de inflamação (proteína C reativa, PCR 470). A tomografia computadorizada do abdome revelou realce da parede vesicular após injeção de contraste i.v., bem como dilatação da vesícula com a presença de ar intraluminal. O paciente foi submetido à colecistectomia através de incisão subcostal direita. A cultura da bile foi positiva para *Clostridium perfringes*. A evolução pós-operatória do paciente foi satisfatória.***Conclusão*** – Esta é uma rara forma de colecistite com alta mortalidade e usualmente se apresenta com sinais clínicos insidiosos.Tomografia computadorizada é a mais acurada forma de diagnóstico de imagem. Antibioticoterapia de largo espectro deve começar rapidamente incluindo proteção à *Clostridia*. Procedimento cirúrgico deve ser indicado tão cedo quanto possível.

DESCRITORES - Colecistite aguda. Enfisema. Abdome agudo. Doenças da vesícula biliar. Colecistite acalculosa.

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Fonte de financiamento: não há
Conflito de interesse: não há
Recebido para publicação:15/04/2008
Aceito para publicação: 21/08/2008